NSERC CRSNG

NSERC Contact

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NSERC's Budget Slashed

The cuts to NSERC announced in the federal budget are much deeper than expected. Over the next three years, we will experience reductions of 5%, 9.8% and 14%, respectively, from our previously-approved budget levels.

Table 1: Budget Levels ($ millions)

	New	Previous	Cut
1995-96	465.6	490	24.4
1996-97	444.2	492.4	48.2
1997-98	428.1	497.8	69.7

At its meeting on March 2, NSERC's Executive Committee confirmed that Council will give priority to the core programs identified in December.

While decisions for 1996-97 and 1997-98 have been deferred to the June meeting of Council, program budgets for the coming fiscal year have now been finalized. As a first step, the Executive approved the accelerated phase out of non-core programs. (The consequences of this decision are shown under "New Program Decisions.") Unfortunately, this action alone is insufficient to meet next year's cut of $24.4 million. With great regret, the Executive decided to roll back the December increases for core program competitions, including the 1995 Research Grants competition, which is paid out of 1995-96 funds. The situation was unavoidable as a competition at this level would have created instalment commitments that would be impossible to sustain in subsequent years, when cuts to the NSERC budget go deeper. It would also force future applicants to compete for a much smaller pie.

The new program budgets are shown in Table 2. Despite the cuts, we have still managed to keep overall program budgets (instalments plus new awards) close to their 1994-95 levels. Even though the large increase to the Research Grants program is now gone, Council has managed to retain a $2 million increase from the level forecast prior to the December decisions. The budget for the 1995 Collaborative Project Grants competition has been cut to $6 million, the minimum level for a viable competition. As announced in December, the

program will now focus exclusively on interdisciplinary proposals and will be subject to a review to investigate how the CPG program objectives can be integrated with those of other core programs. This will be part of a broader review of options for restructuring grant selection processes and incentives for collaborative research.

Table 2: Operational Plan 1995-96 (millions of dollars)

Activity	Forecast 1994-95	Expenditure 1995-96
Core Programs		
Research Grants	187.7	187.7
Subatomic Physics Envelope	19.6	19.3
Collaborative Special Project Grants	13.9	11.9
Collaborative Project Grants	9.4	15.0
Strategic Grants	39.5	39.5
University-Industry Programs	44.1	44.1
Equipment Grants	30.2	27.6
Infrastructure Grants/ Major Facility Access Grants	9.4	8.2
Postgraduate Scholarships	39.8	39.8
Postdoctoral Fellowships	10.2	10.0
Industrial Research Fellowships	3.4	3.4
Industry/Small University USRA	2.4	2.4
General Support (e.g. Steacie, CCAC, Doctoral Prizes)	1.2	1.2
Networks of Centres of Excellence	31.4	21.2
Subtotal	442.0	431.3

Activity	Forecast 1994-95	Expenditure 1995-96
Non-Core Programs		
General Research Grants	6.0	0.0
Conference Grants	0.5	0.0
Scientific Publications	0.3	0.0
Attachés de recherche	0.5	0.3
Miscellaneous Grants	0.2	0.0
International Programs	1.5	0.8
U-I: Senior Industrial Fellowships	0.4	0.0
U-I: Visiting Industrial Fellowships	0.2	0.0
U-I: Affiliations	0.3	0.1
U-I: Workshops and Seminars	0.2	0.0
University-Government Programs	4.0	3.6
University – USRA	5.8	2.4
1967 Science and Engineering Scholarships	3.6	3.0
Science Policy Scholarships	0.2	0.1
Library Science Scholarships	0.1	0.0
University Research Fellowships	3.2	2.0
Women's Faculty Awards	1.8	2.3
Canada International Fellowships	4.1	2.4
Research Reorientation Associateships	0.4	0.1
Miscellaneous Student Awards	0.2	0.0
Subtotal	33.3	17.0
Grants and Scholarships Total	475.3	448.4
Administration	18.4	17.2
TOTAL	493.7	465.6

The preceding changes will cushion somewhat the impact of the first year of cuts, but we cannot underestimate the difficulty of meeting our targets in subsequent years. We are counting on everyone's cooperation and understanding during this difficult period.

New Program Decisions

The General Research Grants are terminated immediately. The budget for the final competition of the University Undergraduate Student Research Awards in their old format is reduced from $4.8 million to $2.4 million. NSERC will honour existing commitments only for the Science Policy Scholarships. The final competitions for the Foreign Researcher Awards and the Canada International Fellowships are cancelled.

Zoologist Wins Gold Medal

University of British Columbia zoology professor Dr. Peter Hochachka has been selected the 1995 recipient of the Canada Gold Medal for Science and Engineering. NSERC President Peter Morand made the announcement at a press conference in Vancouver on January 18. Dr. Morand also announced the winners of the E.W.R. Steacie Memorial Fellowships and NSERC Doctoral Prizes. The awards will be presented in June at a ceremony in Ottawa.

"The Gold Medal award recognizes Dr. Hochachka's extraordinary contributions to Canadian research," said Dr. Morand. "Dr. Hochachka has been described as the world's foremost researcher in adaptational physiology and the dominant creative influence in his field. His groundbreaking studies of the different ways in which animals convert food and oxygen into energy, for example, have changed the course of biological research and our understanding of how animals, including humans, adapt to their environment."

To uncover the profound physiologic and biochemical adaptations that are key to "living without oxygen," Dr. Hochachka has studied adaptation to oxygen deprivation in many different species ©© molluscs, fishes, seals, beavers and humans, to name only a few. His initial work in the 1970s served as an intellectual "jump start" for the field of comparative physiology and biochemistry, acting as a catalyst for an explosion of research around the world. Since then, his pioneering studies have advanced the understanding of the metabolic mechanisms underlying environmental adaptations, demonstrated weaknesses in existing theories of metabolic control, and proposed new models to explain how the supply of energy to muscles is regulated.

In recent years, Dr. Hochachka and his students have been focusing on uncovering the exact molecular and metabolic defense mechanisms against oxygen deprivation.This work, particularly studies on native people, has captured the interest of the medical community because of the implications for diseases caused by or complicated by lack of oxygen.

Dr. Hochachka's research team was the first to study

Quechuas from the Andes and Sherpas from the Himalayas in modern university and hospital laboratories. The team has identified certain heart, brain and muscle adaptations that allow Quechuas and Sherpas to function normally, even thrive, at very high altitudes. This work continues as part of a major research effort supported by a Collaborative Project Grant from NSERC.

Highly skilled at communicating not only the results of his work but the excitement of science, Dr. Hochachka is very much in demand as both a reviewer and a speaker. As well, he participates in (often organizing) several symposia, conferences or workshops per year, and serves on grant selection committees, site visiting committees and the Scientist in Schools Program (communicating science to society). His books have been translated into severa different languages and can be found worldwide. Dr. Hochachka's many honours include Guggenheim, Queen Elizabeth II and Killam fellowships, the Flavelle Medal of the Royal Society, the Gold Medal of the Science Council of British Columbia, and the (1993) Izaak Walton Killam Memorial Prize.

1995 Steacie Fellows

Nominations for E.W.R. Steacie Memorial Fellowships are submitted by universities from across Canada. Winners receive salary plus benefits, allowing them to focus on research full-time, free from teaching and administrative duties, for up to two years.

Four outstanding researchers were selected recipients of Steacie Fellowships:

Dr. Eduardo Blumwald, a biologist in the Department of Botany at the University of Toronto, has made outstanding contributions to the field of plant membrane transport. His research is leading to a new understanding of how plants have adapted to combat disease and the extremes of temperature, drought and salinity present in many Canadian environments.

Dr. Pierre L'Écuyer, a professor in the Department of Computer Science and Operational Research, University of Montreal, has gained international recognition for his research into the predictive and statistical aspects of system simulation and for his advances in the understanding of the theory of random number generation. Such studies are at the heart of advancements in digital computer simulation, a field of growing importance to modern science, engineering and industry.

Dr. Vijayakumar Murty, professor of Mathematics, University of Toronto, is a brilliant young mathematician who is making a major contribution to number theory and arithmetic geometry, a central, but very difficult field of modern mathematics. His work explores how number relationships (such as those found, for example, in many integer equations and in the distribution of prime and non-prime numbers) are intimately tied to deep

problems in geometry.

Dr. Theodore Shepherd, Associate Professor of Physics at the University of Toronto, has opened up an entirely new area of investigation which is re-defining the theory of atmosphere dynamics. Through his leadership, a major national collaboration has recently been launched to develop an accurate model of the middle atmosphere, including the ozone layer. This project has major implications for the understanding of global climate change.

Doctoral Prize Winners

Each university in Canada may nominate two candidates for the NSERC Doctoral Prize. Winners receive $5,000 and a silver medal. The 1995 recipients are:

Dr. Chris Barnard, Electrical Engineering, University of Ottawa. His thesis proposed and demonstrated a new model for optical fibre amplifiers and lasers. The devices could improve the capacity and reduce the cost of future telecommunication networks.

Dr. Djordje Cubric, Mathematics & Statistics, McGill University. Described as "absolutely outstanding," Dr. Cubric's exploration of category theory has resulted in two very significant findings in mathematics, including the proving of a theorem that had eluded researchers for almost 30 years.

Dr. Chuan-Jin (Richard) Shi, Computer Science, University of Waterloo. Dr. Shi's thesis has advanced the theory and practice of Very Large Scale Integrated (VLSI) circuit design. In industrial benchmark tests, his chip encoding tool uses 10% less chip area and significantly less computer time than current industry tools.

Dr. Gang Wu, Chemistry, Dalhousie University. Described as the most outstanding graduate student in Dalhousie's chemistry department for many years, Dr. Wu has been re-writing the book on the understanding of the Nuclear Magnetic Resonance NMR spectra of solid materials. While carrying out his thesis, he also held a full-time position as NMR operator at the Atlantic Region Magnetic Resonance Centre.

Impact of Program Changes

The program changes announced on December 20, 1994 focused NSERC's resources on its core programs and eliminated a number of others. The cancelled programs all had worthwhile objectives, and the elimination of the programs does not mean that the objectives will no longer be pursued: the difference will be in the way the objectives are achieved.

Highly qualified personnel training in particular remains a key NSERC objective. It will continue to be accomplished both through specific programs such as the Postgraduate Scholarships (PGS) and Postdoctoral Fellowships (PDF) programs, and through the research programs. Combination of the Scholarships and Fellowships programs with the Research Grants programs in one directorate will allow for closer integration of the training objective into all Council programs. In addition, the delivery mechanism of the PGS program will be reviewed to see if there are ways of delivering it more efficiently or effectively.

With new communication mechanisms such as the information highway and the development of science in emerging countries, science is becoming more and more international. It is increasingly important for Canadian researchers to develop international linkages and to conduct their research in a global context. The great majority of international interactions have always occurred through the core programs rather than through the discontinued International Programs, which had a budget of just $1.5 million annually. The objectives, criteria and mechanisms of the core programs will be reviewed to ensure that international interactions continue to occur at the appropriate level.

Within NSERC, Dr. Nigel Lloyd has been appointed Director General, Research Grants and Scholarships, assuming responsibility for the scholarships and fellowships programs in addition to the Research Grant programs. Mr. Steve Shugar has been appointed Director, Policy and International Relations, with responsibility for international relations as well as policy, planning and evaluation.

A few changes have been made to the administrative structure of NSERC as well. A Common Services Unit, shared with the Social Sciences and Humanities Research Council (SSHRC), replaces our former Corporate Systems and Services Directorate. Staffed by employees of both councils, the new unit is responsible for Administration, Finance, Information Management and Systems, and Human Resources. Mr. Bruce Mitchell has been appointed Director General of the Common Services Unit.

See the staff directory for these and other staff changes. The directory can also be found on the Internet via NSERC's Gopher server (GOPHER.NSERC.CA, port 70) under "General Information."

WANTED: Technology BC Applications

Technology BC's May 1 deadline is fast approaching, and the Science Council of BC is seeking new proposals for funding. Technology BC is a significant source of financial support for applied research and development projects. This program

supports the development of new products, processes and systems, and projects are considered under a variety of economic sectors. The program has two components: an Industry component, which provides companies with funding for proprietary research and development; and a Collaborative component, which serves to foster partnerships between academic institutes and industry. Typical awards average $80,000 per year. Only BC companies qualify for the awards, and all work must take place in BC.

Funding is also available for the MART program, Market Assessment for Science and Technology. This program allows companies to determine the market potential for new technologies, discoveries and innovations. MART awards are valued at up to $20,000 and enable recipients to hire experts to conduct professional market surveys. Applications are reviewed throughout the year.

For more information, please contact the Science Council of BC at (604) 438-2752 or call toll-free in BC at 1-800-665-7222.

Task Force to Advise on Strategy Implementation

NSERC has recently established a Task Force to advise Council on the implementation of the NSERC Strategy published last spring. Its mandate is as follows:

"The Task Force is required to recommend to the Council ways in which NSERC's Strategy can be implemented effectively and efficiently (for example, with different or fewer programs than at present). The Task Force must address the maintenance of strong university research and training, and excellent service to the research community across Canada, as well as the Strategy's explicit goals, which are:

- Increase research collaboration across sector boundaries and among disciplines;
- Increase the exposure of students to the research environment in other sectors;
- Improve the communication among university researchers, the public, and the user sector.

The parameters of the Task Force's work are NSERC's guiding principles (Excellence, Diversity, Accountability, Operational Efficiency)."

The Task Force met in February and March 1995 and carried out its work within the following boundary conditions: the goals of the Strategy, NSERC's Mission and legal mandate, and the administration and program budgets (global). It also took into account the recent streamlining of NSERC's program structure.

In April and May, the Task Force's recommendations will be circulated within the research community for comment. The report of the Task Force will be presented to Council for discussion at the June meeting; actions or further consultation will follow, as determined by Council. The Task Force membership is listed below.

NSERC Strategy Implementation Task Force

Chair:
Dr. Ray Price, Queen's University

Members:
Dr. Alain Caillé, Université de Sherbrooke[1]
Dr. Bruce P. Clayman, Simon Fraser University[2]
Dr. Donald Dawson, Carleton University
Dr. K.R. Davidson, University of Waterloo
Dr. Ron McCullough, Klastek[1] (Toronto)
Ms. Julie Payette, Canadian Space Agency
Dr. David Pink, St. Francis Xavier University[2]
Dr. Ellie Prepas, University of Alberta
Dr. Ron Steer, University of Saskatchewan[1]
Dr. Charles Terreault, École Polytechnique[1]
Dr. Owen Ward, University of Waterloo
Dr. Hugh Wynne-Edwards, British Columbia Research Council

Secretary:
Ms. Kate Wilson, NSERC

[1] Member - NSERC Council
[2] Member - NSERC Standing Committee

Allocation Formula Adopted for PGS and PDF Awards

In April 1994, NSERC's Committee on Scholarships and Fellowships established an Allocations Subcommittee to recommend a mechanism for the distribution of new awards for 1995 among the three discipline-oriented Postgraduate Scholarships (PGS) and Postdoctoral Fellowships (PDF) Selection Committees.

The Subcommittee based its recommendations on a review of several sources of data. These included: a staff report analyzing the supply of, and demand for, highly qualified personnel (HQP) in the natural sciences and engineering; information on areas supported in the 1993 Strategic Grants competition; a report on the prioritization of Strategic Grant areas; a report by the Organization for Economic Co-operation and Development (OECD) on HQP demand; and the discipline areas of Canada's top 100 corporate spenders on research and development.

A formula-based allocation approach was developed which takes into account a steering factor, the number of applications in the competition in each discipline grouping, and the previous award history of each discipline grouping. Of these three components, the number of applications was given the highest weighting to permit more uniform success ratios for all three discipline groupings.

The allocation formula adopted by Council for this year provides for moderate steering at the PGS level to the Engineering and Computer Sciences disciplines, in comparison to the Life Sciences/Psychology and the Mathematical/Physical Sciences discipline groupings, each of which were given equal but lower priority. All three discipline groupings were given the same priority for the PDF allocation.

The formula and parameter values used in the 1995 competition resulted in the following distribution of available awards:

	PGS	PDF
Engineering and Computer Sciences	42%	22%
Life Sciences/Psychology	31%	38%
Mathematical/Physical Sciences	26%	40%

Policy Changes Affecting S&F Programs

At its December 19, 1994 meeting, Council approved changes to its policies governing certain scholarship and fellowship programs as follows:

Deferment of NSERC Postgraduate and 1967 Science and Engineering Scholarships

The new policy states: Deferment for up to three years of Postgraduate Scholarships and 1967 Science and Engineering Scholarships is permitted only for the purpose of maternity, child rearing or family responsibilities.

Deferrals for employment or any other purpose will no longer be permitted. This change comes into effect immediately, and covers awards made in the 1995-96 competition. It also applies to NSERC postgraduate or 1967 scholars who are completing a master's degree.

Eligibility to Hold NSERC Postdoctoral Fellowships Abroad

The new policy states: To be permitted to hold a Postdoctoral Fellowship abroad applicants must have received, or expect to receive, at least one degree from a Canadian university.

This change will come into effect for awards made in the 1996-97 competition.

New Focus for the CPG Program

In December 1994, Council announced the continuation of the Collaborative Project Grants (CPG) program for at least two more competitions. In the context of reviewing its program structure and focusing on core activities, Council concluded that whereas intra-disciplinary collaborations are already being supported through the Research Grants program, there is still a need for a program to support interdisciplinary collaboration. Consequently, Council has directed that the CPG program be focused on support of interdisciplinary collaborations.

To be eligible, the collaborative team must bring together widely differing, complementary expertise necessary to achieve the objectives of the project. The panels will have the latitude to screen out applications not judged to be sufficiently interdisciplinary. The interdisciplinarity of the project is also now incorporated into a selection criterion. A new selection criterion (under which applicants are asked to contrast the proposed project with other activities funded or requested) has been added to ensure that funded projects represent significant, new endeavours. For 1995, applicants must address the following five selection criteria:

- the quality of the research project;
- the excellence of the researchers;
- the nature and extent of the collaboration, and its interdisciplinarity;
- the training of highly qualified personnel;
- the added benefits derived from CPG funding.

As in the previous competition, up to 50% of the applications may be screened out in a Phase I selection process carried out by the panels during a meeting in June. Applicants whose applications have not passed Phase I will be so informed and feedback will be limited to identifying those criteria for which concerns were raised. NSERC will not accept appeals for the Phase I selection process.Potential applicants should consult the new CPG program description, and a memo describing changes to the CPG and Strategic application forms before preparing their applications (see below).

Attention CPG and Strategic Grant Applicants

NSERC has made several changes to the Researcher's Guide and forms 101 and 100 that affect applicants to the 1995 CPG and Strategic Grant competitions. If you were not advised of the revisions, you can obtain a copy from your university research grants office or from the Internet via NSERC's Gopher server (GOPHER.NSERC.CA, port 70), under "NSERC NEWS

April 1995," (see "Archives," January 1995). In addition, Strategic Grant applicants should note that:

- the application deadline has been extended over the Easter period to 4 p.m., April 18; and
- Conference Grant applications are no longer accepted as part of the Strategic Grants Program.

Application Procedures for the University USRA Program for 1995-96 Simplified

NSERC has simplified the procedures for the submission of applications to the undergraduate student research awards (USRA) program and given universities more responsibility and accountability for its administration. The new procedures have been sent to all university scholarship liaison officers and can be found on the Internet via NSERC's Gopher server (GOPHER.NSERC.CA, port 70), under "What's Happening at NSERC" (see "Program Update").

Understanding Integrity

To help raise awareness of integrity issues, NSERC will publish as a regular feature case studies on integrity that illustrate some of the issues being handled and how they are resolved. These cases will explore the many facets of integrity and should lead to a greater appreciation of the issue and help stimulate discussion.

Issue: Authorship

NSERC received a complaint from a foreign researcher on behalf of his doctoral student. The complaint concerned a published article co-authored by a Canadian university researcher and another foreign researcher who had been a visitor in the Canadian's laboratory on a number of occasions. The article appeared to be based on the master's thesis of the student, which had been done under the supervision of the second foreign researcher in his home country. The latter was identified as first author of the paper and the student's name was not included in the authorship.

Process

Following receipt of the complaint, NSERC obtained the permission of the complainant to release the correspondence and the relevant documents to the Canadian university. NSERC then wrote to the Vice-President (Academic), asking the university to investigate the matter. The university constituted an ad-hoc investigative committee with three members, all external to the university, to examine the

questions raised.

In carrying out its inquiry, the committee met with the Canadians involved, and prepared questions for and took depositions from the various parties outside Canada. This process took considerable time, as the depositions signed under oath had to be obtained from parties in a number of locations abroad. The committee's report, with supporting documentation, was made 14 months after NSERC's initial letter to the university.

The investigative committee concluded that the name of the student and an additional collaborator should have been included as co-authors of the publication in question. Although there was no evidence that the Canadian professor had knowingly participated in wrongful activity, the committee concluded that the professor should have been more vigilant in the circumstances. The professor knew about the participation of students in the research of the foreign collaborator and either knew or ought to have known of a student's involvement in the research leading to the specific article.

The report recommended that the Canadian university and professor take specific action to correct the authorship of the article in question; and that the foreign researcher be prohibited from ever again collaborating at the Canadian university.

Conclusion

The Canadian professor and university and NSERC have accepted the report's conclusions, and the recommendations have been implemented. NSERC staff presented this case to Council's Committee on Professional and Scientific Integrity for review. This committee advises the president on any actions required as a result of investigations into scientific or financial misconduct that involve NSERC funds. The committee is composed of members of the Executive Committee who are not in conflict of interest with cases under review. The committee recommended to NSERC's president that the Canadian professor be barred from participating in peer review as a committee member or an external reviewer for four years. The president accepted this recommendation and NSERC has implemented this sanction.

Convicted of Fraud

On February 21, 1995, Dr. Harold Williams, St. John's, Newfoundland, was convicted of two counts of fraud over $1,000 and sentenced to 60 days in jail. While a professor in the Department of Earth Sciences at Memorial University, he submitted inflated expense claims, misusing approximately $23,000 of NSERC grant funds. The fraud was uncovered by an RCMP Commercial Crime Section investigation that was initiated at NSERC's request in May 1992.

NSERC Launches Task Force on Women in S&E

At the Council meeting in December 1994 when major decisions were made regarding NSERC programs, the Women's Faculty Awards Program was among the programs designated as non-core. This program was due to terminate in 1996. Although Council recognized that most universities now have policies to encourage the recruitment of women faculty, Council believes that it still has a significant role to play in encouraging the participation of women in science and engineering. Consequently, Council created a special task force with the mandate to advise Council on how to use its core programs to create an environment that facilitates and encourages greater participation of women in science and engineering research.

NSERC is now in the process of establishing the task force on Women in Science and Engineering, which will be chaired by Dr. Monique Frize, Professor of Electrical Engineering at the University of New Brunswick and holder of the Northern Telecom/NSERC Chair in Women in Engineering. Other members are being selected with the goal of ensuring gender, sector, and discipline balance, representation from different levels of research experience (i.e. students through to senior researchers) and from university administration, and experience with gender issues management.

The task force will consider a number of topics including process and procedures associated with membership on NSERC committees, peer review process issues (selection of external referees, guidelines to peer review committees), existing policies governing grants and scholarships/fellowships with respect to possible systemic discrimination, and the role of our core programs in facilitating the pursuit of a career in science and engineering research.

Council has asked that the task force report its findings in October 1995.

Individuals interested in providing input to the task force should contact Teresa Jurewicz, Program Officer, or Marilyn Taylor, Secretary to Council.

New Women's Faculty Award Winners

In the recent competition, fifteen highly qualified women were selected to receive Women's Faculty Awards. Held in January, the competition attracted 63 nominees from 25 universities. Of the awards made, 73% were in the physical sciences and engineering, while 27% were in the life sciences.

The recipients of Women's Faculty Awards receive a grant to help start their research program. The university that submitted the nomination receives a contribution of $30,500 towards the cost of the recipient's salary. Winners are also eligible to apply for other NSERC funding.

The fields represented by the successful candidates are: animal biology, cell biology, chemistry, civil engineering, chemical and metallurgical engineering, environmental earth sciences, mechanical engineering, physics, psychology, mathematics and solid earth sciences. Five winners are currently in the U.S.A., one is in England and one is in France. Three have held NSERC Postgraduate Scholarships and four have held NSERC Postdoctoral Fellowships.

Research Update

Getting it right at the start

The University of Calgary has established a new research chair in project management. The goal is to assist government and industry in overcoming resistance to technological change and help Canadian corporations reduce their project costs. Inadequate project management is estimated to cost the Canadian economy somewhere in the order of $20 billion to $40 billion a year -- an enormous drain on capital and productivity.

The chair, which is held by Dr. Francis Hartman, is the latest in a series under the joint NSERC/SSHRC program for Chairs in the Management of Technological Change. It will be supported by 40 of Canada's most successful companies. The chair augments the University's Project Management program, which now has about 80 students learning to manage projects from construction to corporate reorganizations to designing software.

UNB Chair to put province in space

Space imaging and remote sensing are the focus of the University of New Brunswick's (UNB's) new Senior and Junior Chairs in Space Science. The program will be headed by Dr. Gethyn Timothy, a research professor and prize winning photographer who joins UNB from the Centre of Space Science and Astrophysics at Stanford University in California. The new Chair will make New Brunswick history with the HiReS (High-resolution Extreme-Ultraviolet Spectroheliometer) sounding rocket payload. HiReS is being developed by an international consortium led by UNB. The first flight, planned for early 1995, will place Canada at the forefront of studies on the sun's outer atmosphere.

Dr. Timothy is also a participant in the development of the

NASA Space Telescope Imaging Spectrograph, a second generation instrument that will be installed in the Hubble in 1997. In announcing the NSERC funding for the chair, Mr. Leo Derikx, NSERC's Director General of Targeted Research, praised the industrial linkages and potential for commercial spin-offs. The technologies developed will help expand the capabilities of chair partners Com Dev Ltd. and Com Dev Atlantic Ltd.

Electrothermal chair program at Trois-Rivières

Dr. Venkatachari Rajagopalan of the University of Quebec at Trois Rivières has been named to head the new Industrial Research Chair program on effective electrothermal processes. The research program will benefit from close collaboration with Hydro-Québec's Laboratoire des technologies électrochimiques et des électrotechnologies. The principal objectives of the chair are to develop a scientific and technological expertise in electrothermal processes and electronic power converters, to ensure the training of highly qualified personnel, and to collaborate with industry.

UBC Chair will shed light on surfaces

Dr. Lorne Whitehead, a successful academic and industrial researcher best known as the inventor of Light Pipe, has been named to head the NSERC/3M Structured Surface Physics Chair at the University of British Columbia. Whitehead will conduct fundamental and applied research into the unusual properties of micro-structured surfaces. Such properties can include the ability to reduce wind resistance or conduct light. His research is expected to lead to discoveries and potential products of mutual interest to 3M and UBC. Dr. Whitehead's Light Pipe is a technology that allows light wave transmission over long distances with little loss of intensity. Applications include highlighting building features such as downtown Vancouver's Wall Centre, and lighting areas that are hard to reach or where explosives are stored.

New Program Promotes Technology Commercialization

A new program aimed at bridging the gap between university-generated ideas and technologies and their successful commercialization by Canadian businesses was launched on January 13 by Industry Minister John Manley and Dr. Jon Gerrard, Secretary of State (Science, Research and Development). The Technology Partnerships Program (TPP) promotes collaboration between Canadian universities and small and medium-sized businesses to turn university technology and ideas into new and improved products, processes and services.

Over the next three years, the federal government will provide a total of $18 million for the program through Industry Canada and the three university research granting councils (NSERC, MRC, and SSHRC). The funding is expected to lever a matching $18 million from participating businesses, while universities will contribute technical personnel services and facilities.

TPP project proposals may be submitted at any time on NSERC Form 101 by a university researcher (or research group) and an eligible industrial partner in collaboration with the university's industrial liaison office or its equivalent. Applicants must demonstrate clearly the potential to transfer the university-generated technology to the industrial partner.

TPP grants can cover up to half of the total cost of the project, with the industrial partner providing the balance in cash and in kind. Grants are for up to three years, to a maximum of $150,000 annually.

The program is being administered by the councils through a Secretariat established at NSERC, and a Management Committee representing the councils, Industry Canada, and the National Research Council is responsible for the operational management of the program.

For additional information, please contact:

Margaret Caughey
Technology Partnerships Program Secretariat
NSERC
350 Albert Street
Ottawa, Ontario
K1A 1H5
(613) 996-4993

The 1996 Canada Gold Medal for Science and Engineering
A Call for Nominations

NSERC is seeking nominations for next year's Gold Medal. Do you know someone with the appropriate qualifications? To find out how to nominate him or her, read on.

Who can be nominated?

Persons from any sector - academic, business and industry, or government (excluding current Members of NSERC) - who have made sustained and outstanding contributions to Canadian research in the natural sciences and engineering.

What type of achievements are we looking for?

Achievements of exceptional importance and impact which lead to the enhancement of the research enterprise in Canada.

How do you nominate a person?

For details, contact:

NSERC
350 Albert Street
Ottawa, Ontario K1A 1H5
Telephone (613) 996-8172
E-Mail: resgrant@nserc.ca;
Internet: gopher.nserc.ca, port 70.

The deadline for nominations is **September 1, 1995.**

NSERC and NRC Share Resources and Expertise

Ever since the creation of NSERC from NRC in 1978, the organizations have maintained a close working relationship. Many NRC scientists participate in NSERC's peer review process as committee members or external referees. As well, NRC researchers are active members of collaborative research endeavours involving university, government and private sector partners.

Cooperation between NSERC and NRC is also ensured through regular joint meetings of the senior management of the agencies. When the two presidents and their senior managers met in mid January, they reaffirmed their commitment to finding ways to optimize access to NRC research infrastructure by the university community. Sharing of national research resources is in line with the thrusts outlined in the federal Task Group on Sustainable Wealth and Job Creation.

Many well-known projects, and some recent initiatives have resulted from the sharing of resources and expertise between the two organizations. The following are just a few examples.

Advanced Systems Research Aircraft

NRC's Advanced Systems Research Aircraft (ASRA) is a unique research helicopter test bed designed to promote university-industry research. Using NRC's Institute for Aerospace Research state-of-the-art facility, users will exploit its unique capability to simulate the flying conditions of a wide range of aircraft. Projects will focus on flight mechanics, flight systems and pilot-aircraft human factors R & D activities. Joining NRC and the Department of National Defence, NSERC contributed $1 million in 1993-94 towards the purchase of ASRA. NSERC and NRC support jointly approved university

projects, consistent with the priority research needs of the aerospace community, through provision of research grants and access to ASRA.

S1 Ge CVD Facility

NRC and NSERC agreed in November 1994 on a joint funding formula for the creation of a Silicon-Germanium Chemical Vapour Disposition Facility at NRC's Institute for Microstructural Sciences. The facility, also supported by Northern Telecom, will develop silicon-germanium technology for producing high-speed electronic devices with applications in the communications industry. NSERC's 25% contribution secures access to university researchers for an equivalent proportion of the up-time of the facility.

Gemini

The Gemini Project is a collaboration of the United States, the United Kingdom, Canada, Chile, Brazil and Argentina to build and operate twin 8-metre telescopes. Canada, represented by NRC, is a partner in the design and construction of the telescopes designed to provide the sharpest views ever of deep space from the Earth's surface. Gemini is a $176 million (U.S.) project to which Canada is contributing 15%. NRC's contribution is close to $21 million (CA) between 1993-94 and 1998-99. NSERC, for its part, committed $10 million over a seven-year period in support of Gemini.

Industrial Application of University Research

NSERC and NRC's Industrial Research Assistance Program (IRAP) are collaborating in a special effort to foster the transfer of research results from universities to industrial SMEs. The collaboration will provide an opportunity for universities who wish to disclose new inventions and technologies to Canadian business, in particular industrial small- and medium-sized enterprises. Universities have been invited to provide information to NSERC. Each year, 50 cases will be featured on the Canada-wide IRAPNet for the use of IRAP's Industrial Technology Advisors in serving their industrial clients.

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Important Notices